

WATER WELL DECOMMISSIONING

CONSTRUCTION SPECIFICATION

1. SCOPE

The work shall consist of sealing and permanent closure of water well no longer in use.

2. MATERIALS

A. *Neat cement grout* shall consist of a mixture of cement and water in the proportion of one (1) bag of Portland cement (94 pounds, ASTM C 150, Type I or API-10A, Class A) per five (5) to six (6) gallons of clean water from a known safe and uncontaminated source. Powdered bentonite may be added up to a ratio of five (5) pounds per 94 pound bag of cement.

B. *Concrete (sand-cement) grout* shall consist of a mixture of cement, sand, and water in the proportion of one (1) bag of Portland cement, (94 pounds, ASTM C 150, Type I or API-10A, Class A) and one (1) cubic foot of dry sand per five (5) to six (6) gallons of clean water from a known safe and uncontaminated source. The sand shall conform to ASTM C 33, fine aggregate for concrete.

C. *Sodium bentonite water slurry* (drilling mud and cuttings) shall have a mud weight of at least eleven (11) pounds per gallon and a sand content of ten (10) to twenty-five (25) percent by volume of the slurry. When a bentonite slurry is used to seal a well, the top five (5) feet of the well shall be filled with neat cement grout, concrete (sand-cement) grout, concrete or approved bentonite chips.

D. *Clay slurry* is a fluid mixture of water, clean native or commercial clay and drill cuttings. The clay slurry shall have a mud weight of at least eleven (11) pounds per gallon.

E. *Bentonite chips* are irregularly shaped pieces of sodium bentonite that look very much like crushed limestone. The most current revision of the Wisconsin Department of Natural Resources publication PUBL-DG-016 contains a list of approved brands of bentonite chips that shall be used.

F. *Concrete* shall consist of a commercially prepared mixture of sand, gravel, Portland cement, and water. It shall contain at least 6 bags (94 pounds each) Portland cement per cubic yard and a maximum of 6 gallons of water per bag of cement. The maximum gravel size shall not exceed 1/3 of the inside diameter of the conductor pipe used to place the material.

G. *Conductor (tremie) pipe* shall be:

- a) Metal pipe,
- b) rubber-covered hose reinforced with braided fiber or steel with a minimum rating of 300 psi, or
- c) thermoplastic pipe with a minimum rating of 100 psi. Thermoplastics include PVC, CPVC, PE, PB, or ABS and shall not be used for depths greater than 100 feet.

H. *Aggregates* can consist of sand, crushed stone or similar materials and must be uncontaminated and consistent in size to minimize bridging during placement.

I. *A bridge seal* consists of installing an expandable plug made of wood, neoprene, or other mechanical packer.

3. MARKINGS AND CERTIFICATION

Markings on material identifying the manufacture and indicating compliance with appropriate specification(s) can be accepted as evidence that the material meets the

requirements of this specification. If the material does not bear these markings, the manufacturer must certify that it complies with the requirements of this specification.

If required in Section 5, place a metal “target” to the top 3 inches of well-head seal so that the decommissioned well may be easily located with a metal detector.

4. REPORTING

The owner or his/her agent shall notify PA DCNR Bureau of Topographic and Geological Survey of their intent to decommission a well at least 10 days before the well is to be sealed or filled.

As part of this process, they will fill out the “Well Abandonment Form” as found in the most current “Ground Water Monitoring Guidance Manual” by PA-DEP in CH. 7 Well Abandonment Procedures.

The contactor shall certify his work upon completion of the project for certification to PA-DCNR.

The contractor shall maintain records of all materials used, locations, depths, etc.

5. ADDITIONAL CONDITIONS WHICH APPLY TO THIS PROJECT ARE: